

## Patent Claims

1. A high-voltage supply device for electric filters, having high-voltage devices (1), which are arranged close to the electric filter, and by means of which the electric filter can be supplied with an electrical high voltage, measuring heads (2, 3), which are associated with the high-voltage devices (1), and by means of which measured values and, if necessary, diagnosis data from the high-voltage devices (1) can be detected and transmitted, and control units (6), which are each associated with a high-voltage device (1), and by means of which the high-voltage devices (1) associated with them can be controlled and regulated depending on requirements and taking into consideration measured values and, if necessary, diagnosis data determined by the measuring heads (2, 3), characterized in that the measuring heads (2, 3) on the high-voltage device side each have an optical waveguide interface (4), in that the measuring heads (2, 3) on the high-voltage device side are connected via their optical waveguide interfaces (4) in a first local optical waveguide network (5), in that the control units (6) are connected to one another by means of a second local optical waveguide network (7), and in that the local optical waveguide network (5) on the high-voltage device side and the local optical waveguide network (7) on the control unit side are coupled to one another by means of an optical waveguide connection (8).

30

2. The high-voltage supply device for electric filters as claimed in claim 1, in which the local optical waveguide network (5) on the high-voltage device side and/or the local optical waveguide network (7) on the control unit side has/have a ring topology.

35

3. The high-voltage supply device for electric filters as claimed in claim 1, in which the local

optical waveguide network (5) on the high-voltage device side and/or the local optical waveguide network (7) on the control unit side has/have a star topology.

- 5 4. The high-voltage supply device for electric filters as claimed in one of claims 1 to 3, in which the ring or star topologies

forming the local optical waveguide networks (5, 7) are of redundant design.

5. The high-voltage supply device for electric filters as claimed in one of claims 1 to 4, in which the optical waveguides of the local optical waveguide networks (5, 7) are plastic optical waveguides which can be prefabricated.

6. The high-voltage supply device for electric filters as claimed in one of claims 1 to 5, in which the optical waveguide connection (8) between the two local optical waveguide networks (5, 7) is of redundant design.

7. The high-voltage supply device for electric filters as claimed in one of claims 1 to 6, in which the optical waveguides of the optical waveguide connection are in the form of glass or PCF optical waveguides.

8. The high-voltage supply device for electric filters as claimed in one of claims 1 to 7, in which the optical waveguide connection (8) is in the form of a sheathed optical waveguide cable, for example in the form of a CUPOFLEX+ cable.

9. The high-voltage supply device for electric filters as claimed in one of claims 1 to 8, in which standard protocols, for example CAN, PROFIBUS, TCP/IP protocols or the like, may be used as the transmission protocol between the measuring heads (2, 3) and the control units (6).